

## Metadata for Zion National Park, Spatial Vegetation Data: Cover type / Association level of the National Vegetation Classification System

### Identification\_Information:

#### Citation:

##### Citation\_Information:

Originator: USBR Remote Sensing and GIS Group, Denver, Colorado

Publication\_Date: Unpublished Material

Publication\_Time: Unknown

Title: Zion National Park Vegetation Mapping Project Vegetation Coverage

Geospatial\_Data\_Presentation\_Form: map: vector digital data

Online\_Linkage: [http://biology.usgs.gov/npsveg/zion/index.html#geospatial\\_veg\\_info](http://biology.usgs.gov/npsveg/zion/index.html#geospatial_veg_info)

### Description:

**Abstract:** This metadata is for the vegetation and land-use geo-spatial database for Zion National Park and surrounding areas. The project is authorized as part of the USGS/NPS Vegetation Mapping Program. The program is being administered by the Biological Resources Division (BRD), United States Geological Survey (USGS). The USGS/BRD is responsible for overall management and oversight of all ongoing mapping efforts. This mapping effort was performed by the U.S. Bureau of Reclamation's (USBR) Remote Sensing and GIS Group, Technical Service Center, Denver, Colorado and NatureServe (formally The Nature Conservancy). The vegetation mapping program is part of a larger Inventory and Monitoring (I&M) program started by the National Park Service (NPS).

**Purpose:** The purposes of the mapping effort are varied and include the following: Provides support for NPS Resources Management; Promotes vegetation-related research for both NPS and USGS/BRD; Provides support for NPS Planning and Compliance; Adds to the information base for NPS Interpretation; and Assists in NPS Operations. The NPS I&M goals are, among others, to consistently map and document the vegetation of all National Park Service units with a resource component, thereby creating a baseline vegetation inventory.

### Time\_Period\_of\_Content:

#### Time\_Period\_Information:

##### Single\_Date/Time:

Calendar\_Date: 19990622

Currentness\_Reference: ground condition

### Status:

Progress: Complete

Maintenance\_and\_Update\_Frequency: None planned

### Spatial\_Domain:

Description\_of\_Geographic\_Extent: Zion National Park and environs

#### Bounding\_Coordinates:

West\_Bounding\_Coordinate: -113.25564

East\_Bounding\_Coordinate: -112.823821

North\_Bounding\_Coordinate: 37.532

South\_Bounding\_Coordinate: 37.106056

### Keywords:

#### Theme:

Theme\_Keyword\_Thesaurus: None

Theme\_Keyword: Zion National Park

Theme\_Keyword: Utah

Theme\_Keyword: Vegetation

Theme\_Keyword: Land cover and Land use

Theme\_Keyword: USGS-NPS National Vegetation Mapping Program

Theme\_Keyword: Plant Association

#### Place:

Place\_Keyword\_Thesaurus: None

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Place\_Keyword: National Park Service

Place\_Keyword: North America

Place\_Keyword: United States

Place\_Keyword: Utah

Place\_Keyword: Zion National Park

#### **Taxonomy:**

##### **Keywords/Taxon:**

Taxonomic\_Keyword\_Thesaurus: None

Taxonomic\_Keywords: Standardized National Vegetation Classification System

Taxonomic\_Keywords: vegetation classification

Taxonomic\_Keywords: alliance

Taxonomic\_Keywords: community association

##### **Taxonomic\_Classification:**

Taxon\_Rank\_Name: Kingdom

Taxon\_Rank\_Value: Plantae

Access\_Constraints: None

Use\_Constraints: Acknowledgment of the USGS and U.S. Bureau of Reclamation Remote Sensing and GIS Group would be appreciated in products derived from these data. Any person using the information presented here should fully understand the data collection and compilation before beginning analysis. The burden for determining fitness for use lies entirely with the user.

#### **Point\_of\_Contact:**

##### **Contact\_Information:**

##### **Contact\_Organization\_Primary:**

Contact\_Organization: Bureau of Reclamation

Contact\_Person: Dan Cogan

Contact\_Position: Physical Scientist

##### **Contact\_Address:**

Address\_Type: mailing and physical address

Address: P.O. Box 25007 Bldg. 56 Denver Federal Center M.S. D-8260

City: Denver

State\_or\_Province: Colorado

Postal\_Code: 80225

Country: U.S.A

Contact\_Voice\_Telephone: 303-445-2291

Contact\_TDD/TTY\_Telephone: 303-445-2266

Contact\_Facsimile\_Telephone: 303-445-6337

Contact\_Electronic\_Mail\_Address: dcogan@do.usbr.gov

Hours\_of\_Service: 8 am - 5 pm

#### **Browse\_Graphic:**

Browse\_Graphic\_File\_Name: <http://biology.usgs.gov/npsveg/zion/images/zionveg.jpg>

##### **Browse\_Graphic\_File\_Description:**

Graphic file showing vegetation distribution of

Zion NP and environs, by ecological subgroups. Low resolution for web browser - 352 KB file size.

Browse\_Graphic\_File\_Type: JPG

#### **Browse\_Graphic:**

Browse\_Graphic\_File\_Name: [http://biology.usgs.gov/npsveg/zion/images/vegmap\\_large.jpg](http://biology.usgs.gov/npsveg/zion/images/vegmap_large.jpg)

##### **Browse\_Graphic\_File\_Description:**

Graphic file showing vegetation distribution of Zion NP and environs, by ecological subgroups. High resolution for web browser - 5.6 MB file size.

Browse\_Graphic\_File\_Type: JPG

Data\_Set\_Credit: USBR, Denver, Colorado: Daniel Cogan, Janet Coles, Doug Crawford, Trudy Meyer, and Mike Pucherelli.

Native\_Data\_Set\_Environment: Microsoft Windows NT Version 4.0 (Build 1381) Service Pack 6; ESRI ArcCatalog 8.1.2.671, HP-UNIX ArcInfo, Windows NT ArcInfo 8.x

#### **Data\_Quality\_Information:**

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#### Attribute\_Accuracy:

Attribute\_Accuracy\_Report: The thematic accuracy is approximately 81%. Please read the accompanying report or check with Zion National Park for the latest accuracy assessment values.

Logical\_Consistency\_Report: All polygon features were checked for topology, existence of label points, and label point uniqueness. The labels were checked for correct and complete attributing. All nodes were checked for unintentional lines and to ensure that the polygons were closed. All steps performed using ESRI ArcInfo commands.

Completeness\_Report: All data that could be interpreted from the aerial photos were digitized in accordance with the minimum mapping unit (MMU) of 1/2 hectare. This included selected features that fell into the National Vegetation Classification and the Anderson Level II land use classification. Some classes below the MMU were included, especially water and wetland features and those at the edge of the study area (i.e. cut off by other features and borders). Roads (to visible right-of-way or fence line) and streams/drainages wider than 10 meters were digitized as polygons and attributed accordingly.

#### Positional\_Accuracy:

##### Horizontal\_Positional\_Accuracy:

Horizontal\_Positional\_Accuracy\_Report: (Unknown, Zion ortho-photo basemap, reference Zion ortho-photo metadata.)

##### Vertical\_Positional\_Accuracy:

Vertical\_Positional\_Accuracy\_Report: (Unknown, Zion ortho-photo basemap, reference Zion ortho-photo metadata.)

#### Lineage:

##### Source\_Information:

###### Source\_Citation:

###### Citation\_Information:

Originator: Horizons, Inc.

Publication\_Date: 19991217

Title: Zion National Park, Utah Orthophotos

Geospatial\_Data\_Presentation\_Form: vector digital data

Source\_Scale\_Denominator: 40000

Type\_of\_Source\_Media: AGFA N400 photographic film

Source\_Time\_Period\_of\_Content:

###### Time\_Period\_Information:

Range\_of\_Dates/Times:

Beginning\_Date: 19990622

Ending\_Date: 19990623

Source\_Currentness\_Reference: Date of Photography

Source\_Citation\_Abbreviation: Zion Ortho-photo

Source\_Contribution: Unknown

#### Process\_Step:

Process\_Description: MAP CLASSES: Vegetation classification was in accordance with the standards developed under the USGS/NPS Vegetation Mapping Program using the National Vegetation Classification Standard. Field work (collecting plot data) aided in the development of the vegetation classes. In addition, the Park had specific types that were also mapped. PHOTO INTERPRETATION: All map classes were interpreted from 1:12,000-scale, true color aerial photography and 1:12,000-scale true color ortho-rectified photography (ortho-photos). Photo-interpretation used the standard identification features such as tone, texture, color, pattern, topographic position, and shadow. In addition, field sample locations and their vegetation descriptions aided in assigning a map class to each polygon. Photographs were examined using a stereoscope as needed. Linework was created on mylars placed over both the aerial photos and the ortho-photos. GIS PROCEDURES: The linework on the mylar ortho-photo overlays were transferred into the GIS database by one of two methods, either heads-up digitizing or scanning. METHOD I: Heads-up digitizing is a procedure whereby the operator digitizes by hand and eye on a computer terminal screen showing a digital image of an ortho-rectified photo. By looking at similar features on both the aerial photograph and on the orthophoto, the line drawn on the aerial photo overlay is manually transferred to the digital image. METHOD II: The majority of the linework at Zion was transferred via scanning the ortho-photo mylar overlays using a large-format color scanner. Before the mylar was scanned, it was marked with control points that correspond to the 1000-meter grid embossed on the hard-copy ortho-photos. GIS software was then used to convert the scanned files from a raster to vector base using centerline commands. Extensive cleaning, edge matching, and general editing of the digital vectors was completed before polygon topology was created. Labels were created for each polygon and they were attributed with the necessary vegetation information. The entire transfer and editing sequence was automated via in-house Arc/INFO AML programs. OTHER DATA: The mapping project (proj\_bndry) and park boundary (park\_bndry) coverages were acquired from the Park. A

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flight line coverage (zion\_flight) was obtained from the photography vendor. Field Observation, Plot, and Accuracy Assessment data point coverages (zion\_obs, zion\_plots, and zion\_aa) were created by entering points with the 'generate' command using a text file of points and x-y coordinates.

Process\_Date: 2002

Process\_Contact:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: Dan Cogan

Contact\_Organization: Bureau of Reclamation

Contact\_Position: Physical Scientist

Contact\_Address:

Address\_Type: mailing and physical address

Address: P.O. Box 25007 Bldg. 56 Denver Federal Center M.S. D-8260

City: Denver

State\_or\_Province: Colorado

Postal\_Code: 80225

Country: U.S.A

Contact\_Voice\_Telephone: 303-445-2291

Contact\_TDD/TTY\_Telephone: 303-445-2266

Contact\_Facsimile\_Telephone: 303-445-6337

Contact\_Electronic\_Mail\_Address: dcogan@do.usbr.gov

Hours\_of\_Service: 8 am - 5 pm

Spatial\_Data\_Organization\_Information:

Direct\_Spatial\_Reference\_Method: Vector

Point\_and\_Vector\_Object\_Information:

SDTS\_Terms\_Description:

SDTS\_Point\_and\_Vector\_Object\_Type: Complete chain

Point\_and\_Vector\_Object\_Count: 123530

SDTS\_Terms\_Description:

SDTS\_Point\_and\_Vector\_Object\_Type: Label point

Point\_and\_Vector\_Object\_Count: 41337

SDTS\_Terms\_Description:

SDTS\_Point\_and\_Vector\_Object\_Type: GT-polygon composed of chains

Point\_and\_Vector\_Object\_Count: 41337

Spatial\_Reference\_Information:

Horizontal\_Coordinate\_System\_Definition:

Planar:

Grid\_Coordinate\_System:

Grid\_Coordinate\_System\_Name: Universal Transverse Mercator

Universal\_Transverse\_Mercator:

UTM\_Zone\_Number: 12

Transverse\_Mercator:

Scale\_Factor\_at\_Central\_Meridian: 0.9996

Longitude\_of\_Central\_Meridian: -111

Latitude\_of\_Projection\_Origin: 0

False\_Easting: 500000

False\_Northing: 0

Planar\_Coordinate\_Information:

Planar\_Coordinate\_Encoding\_Method: Coordinate Pair

Coordinate\_Representation:

Abscissa\_Resolution: 0.000499

Ordinate\_Resolution: 0.000499

Planar\_Distance\_Units: meters

Geodetic\_Model:

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Horizontal\_Datum\_Name: North American Datum of 1983  
Ellipsoid\_Name: Geodetic Reference System 80  
Semi-major\_Axis: 6378137  
Denominator\_of\_Flattening\_Ratio: 298.257

**Entity\_and\_Attribute\_Information:**

**Overview\_Description:**

Entity\_and\_Attribute\_Overview: Attributes were either generated by ArcInfo or assigned by the USBR Remote Sensing GIS Group.

Entity\_and\_Attribute\_Detail\_Citation: Zion National Park Vegetation Mapping Project Final Report (DOI - USGS/USBR)

**Detailed\_Description:**

**Entity\_Type:**

Entity\_Type\_Label: zion\_veg.aat

Entity\_Type\_Definition: Zion National Park Vegetation Mapping Project: Vegetation Coverage Arc Attribute Table

Entity\_Type\_Definition\_Source: Dan Cogan USBR Remote Sensing and GIS Group

**Attribute:**

Attribute\_Label: DIGTYPE

Attribute\_Definition: Arc (line) attribute - denotes how the arc was entered/created. Denotes lines that represent Park, Project, and Vegetation polygon boundaries.

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group

**Attribute\_Domain\_Values:**

**Enumerated\_Domain:**

Enumerated\_Domain\_Value: 1

Enumerated\_Domain\_Value\_Definition: Represents lines that were drawn using heads-up digitizing.

Enumerated\_Domain\_Value\_Definition\_Source: Sequential unique whole numbers that are automatically generated.

**Enumerated\_Domain:**

Enumerated\_Domain\_Value: 2

Enumerated\_Domain\_Value\_Definition: Represents scanned lines that were smoothed.

Enumerated\_Domain\_Value\_Definition\_Source: Sequential unique whole numbers that are automatically generated.

**Enumerated\_Domain:**

Enumerated\_Domain\_Value: 3

Enumerated\_Domain\_Value\_Definition: Represents lines that are the project boundary.

Enumerated\_Domain\_Value\_Definition\_Source: Sequential unique whole numbers that are automatically generated.

**Attribute:**

Attribute\_Label: FID

Attribute\_Definition: Internal feature number.

Attribute\_Definition\_Source: ESRI

**Attribute\_Domain\_Values:**

Unrepresentable\_Domain: Sequential unique whole numbers that are automatically generated.

**Attribute:**

Attribute\_Label: FNODE#

Attribute\_Definition: Internal node number for the beginning of an arc (from-node).

Attribute\_Definition\_Source: ESRI

**Attribute\_Domain\_Values:**

Unrepresentable\_Domain: Whole numbers that are automatically generated.

**Attribute:**

Attribute\_Label: LENGTH

Attribute\_Definition: Length of feature in internal units.

Attribute\_Definition\_Source: ESRI

**Attribute\_Domain\_Values:**

Unrepresentable\_Domain: Positive real numbers that are automatically generated.

**Attribute:**

Attribute\_Label: LPOLY#

Attribute\_Definition: Internal node number for the left polygon.

Attribute\_Definition\_Source: ESRI

**Attribute\_Domain\_Values:**

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Unrepresentable\_Domain: Whole numbers that are automatically generated.

Attribute:

Attribute\_Label: RPOLY#

Attribute\_Definition: Internal node number for the right polygon.

Attribute\_Definition\_Source: ESRI

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Whole numbers that are automatically generated.

Attribute:

Attribute\_Label: Shape

Attribute\_Definition: Feature geometry.

Attribute\_Definition\_Source: ESRI

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Coordinates defining the features.

Attribute:

Attribute\_Label: TNODE#

Attribute\_Definition: Internal node number for the end of an arc (to-node).

Attribute\_Definition\_Source: ESRI

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Whole numbers that are automatically generated.

Attribute:

Attribute\_Label: ZION\_VEG#

Attribute\_Definition: Internal feature number.

Attribute\_Definition\_Source: ESRI

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Sequential unique whole numbers that are automatically generated.

Attribute:

Attribute\_Label: ZION\_VEG-ID

Attribute\_Definition: User-defined feature number.

Attribute\_Definition\_Source: ESRI

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Sequential unique whole numbers that are automatically generated.

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label: zion\_veg.pat

Entity\_Type\_Definition: Zion National Park Vegetation Mapping Project: Vegetation Coverage Arc Attribute Table

Entity\_Type\_Definition\_Source: Dan Cogan USBR Remote Sensing and GIS Group

Attribute:

Attribute\_Label: ALL\_CNAME

Attribute\_Definition: NVCS Alliance Common Name(s)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: ALL\_KEY

Attribute\_Definition: NVCS Alliance Code(s)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: ALL\_NAME

Attribute\_Definition: NVCS Alliance Scientific Name(s)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: AREA

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Attribute\_Definition: Area of feature in internal units (meters) squared.

Attribute\_Definition\_Source: ESRI

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Positive real numbers that are automatically generated.

Attribute:

Attribute\_Label: ASN\_C EGL

Attribute\_Definition: NVCS Internal Code for Plant Association(s)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: ASN\_CNAME

Attribute\_Definition: NVCS Association Common Name(s) (Part 1)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: ASN\_CNAME2

Attribute\_Definition: NVCS Association Common Name(s) (Part 2)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: ASN\_NAME1

Attribute\_Definition: NVCS Association Scientific Name(s) (Part 1)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: ASN\_NAME2

Attribute\_Definition: NVCS Association Scientific Name(s) (Part 2)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: ASPEN

Attribute\_Definition: Indicates the presence of aspen in polygon (yes/no).

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Enumerated\_Domain:

Enumerated\_Domain\_Value: Yes

Enumerated\_Domain\_Value\_Definition: Single aspen trees/shrubs were observed in the polygon.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: No

Enumerated\_Domain\_Value\_Definition: No single aspen trees/shrubs were observed in the polygon.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Attribute:

Attribute\_Label: BURN

Attribute\_Definition: Indicates the evidence of a recent burn in polygon (yes/no).

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Enumerated\_Domain:

Enumerated\_Domain\_Value: Yes

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Enumerated\_Domain\_Value\_Definition: Evidence of a recent burn was observed.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: No

Enumerated\_Domain\_Value\_Definition: No evidence of a recent burn was observed.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Attribute:

Attribute\_Label: CC\_GRASS

Attribute\_Definition: Percent canopy cover in the herbaceous stratum.

Attribute\_Definition\_Source: Zion National Park

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Percentage and Text

Enumerated\_Domain:

Enumerated\_Domain\_Value: N/A

Enumerated\_Domain\_Value\_Definition: This attribute was not applicable for this vegetation or land-cover type.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 0-5%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the herbaceous stratum is estimated to be greater than 0 but less than 5%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 5-25%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the herbaceous stratum is estimated to be greater than 5% but less than 25%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 25-50%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the herbaceous stratum is estimated to be greater than 25% but less than 50%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 50-75%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the herbaceous stratum is estimated to be greater than 50% but less than 75%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 75-100%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the herbaceous stratum is estimated to be greater than 75%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Attribute:

Attribute\_Label: CC\_SHRUB

Attribute\_Definition: Percent canopy cover in the shrub stratum.

Attribute\_Definition\_Source: Zion National Park

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Percentage and Text

Enumerated\_Domain:

Enumerated\_Domain\_Value: N/A

Enumerated\_Domain\_Value\_Definition: This attribute was not applicable for this vegetation or land-cover type.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 0-5%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the shrub stratum is estimated to be greater than 0 but less than 5%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:



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Enumerated\_Domain\_Value: 5-25%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the shrub stratum is estimated to be greater than 5% but less than 25%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 25-50%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the shrub stratum is estimated to be greater than 25% but less than 50%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 50-75%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the shrub stratum is estimated to be greater than 50% but less than 75%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 75-100%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the shrub stratum is estimated to be greater than 75%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Attribute:

Attribute\_Label: CC\_TREE

Attribute\_Definition: Percent canopy cover in the tree stratum.

Attribute\_Definition\_Source: Zion National Park

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Percentage and Text

Enumerated\_Domain:

Enumerated\_Domain\_Value: N/A

Enumerated\_Domain\_Value\_Definition: This attribute was not applicable for this vegetation or land-cover type.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 0-5%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the tree stratum is estimated to be greater than 0 but less than 5%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 5-25%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the tree stratum is estimated to be greater than 5% but less than 25%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 25-50%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the tree stratum is estimated to be greater than 25% but less than 50%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 50-75%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the tree stratum is estimated to be greater than 50% but less than 75%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 75-100%

Enumerated\_Domain\_Value\_Definition: Canopy cover of the tree stratum is estimated to be greater than 75%.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Attribute:

Attribute\_Label: CLASS

Attribute\_Definition: NVCS Class Name(s) and Code(s)

Attribute\_Definition\_Source: National Vegetation Classification System

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Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: COMMENT1

Attribute\_Definition: General description of the map unit.

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: COMMENT2

Attribute\_Definition: General comment describing how the map unit relates to other map units.

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: ECO\_CODE

Attribute\_Definition: Ecological Systems Classification Code

Attribute\_Definition\_Source: NatureServe Ecological Classification

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Numeric

Attribute:

Attribute\_Label: ECO\_NAME

Attribute\_Definition: Ecological Systems Classification Name

Attribute\_Definition\_Source: NatureServe Ecological Classification

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: ECOLOGY

Attribute\_Definition: Ecological description of the polygon

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Enumerated\_Domain:

Enumerated\_Domain\_Value: Coniferous Forest

Enumerated\_Domain\_Value\_Definition: This type is dominated by conifer trees forming a closed canopy.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Coniferous Woodland

Enumerated\_Domain\_Value\_Definition: This type is dominated by conifer trees forming an open or discontinuous canopy.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Deciduous Forest

Enumerated\_Domain\_Value\_Definition: This type is dominated by deciduous trees forming a closed canopy.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Floodplain Woodland

Enumerated\_Domain\_Value\_Definition: This type is dominated by deciduous trees forming an open or discontinuous canopy alongside rivers and streams.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Land-use

Enumerated\_Domain\_Value\_Definition: This type contains obvious human-disturbed lands, natural streams and water bodies, and other non-vegetation lands.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

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Enumerated\_Domain\_Value: Mesic Grassland

Enumerated\_Domain\_Value\_Definition: This type contains herbaceous graminoids and forbs found on wet soils.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Riparian Shrubland

Enumerated\_Domain\_Value\_Definition: This type contains shrubs common on mesic soils associated with floodplains and waterways.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Unvegetation Surface

Enumerated\_Domain\_Value\_Definition: This type represents all of the barren rock and geologic formations that support very little, if any vegetation.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Upland Grassland

Enumerated\_Domain\_Value\_Definition: This type is dominated by graminoids common to arid and semi-arid soils.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Upland Shrubland

Enumerated\_Domain\_Value\_Definition: This type contains shrubs common to dry slopes, plains, and mesa tops.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Wetland Herbaceous Vegetation

Enumerated\_Domain\_Value\_Definition: This type is dominated by herbaceous plants common on saturated soils in and around bodies of water.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Xeric Shrubland

Enumerated\_Domain\_Value\_Definition: This type is dominated by shrubs common to very arid slopes and other desert areas.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Attribute:

Attribute\_Label: FID

Attribute\_Definition: Internal feature number.

Attribute\_Definition\_Source: ESRI

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Sequential unique whole numbers that are automatically generated.

Attribute:

Attribute\_Label: FORMATION

Attribute\_Definition: NVCS Formation Name(s)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: GROUP

Attribute\_Definition: NVCS Group Name(s) and Code(s)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: HGT\_CLASS

Attribute\_Definition: Height class (range) of the upper strata.

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group and Zion National Park

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Enumerated\_Domain:

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Enumerated\_Domain\_Value: N/A

Enumerated\_Domain\_Value\_Definition: This attribute was not applicable for this vegetation or land-cover type.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 0-2 meters

Enumerated\_Domain\_Value\_Definition: Height of the tallest stratum is estimated to be greater than 0 but less than 2 meters.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 2-5 meters

Enumerated\_Domain\_Value\_Definition: Height of the tallest stratum is estimated to be greater than 2 but less than 5 meters.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 5-10 meters

Enumerated\_Domain\_Value\_Definition: Height of the tallest stratum is estimated to be greater than 5 but less than 10 meters.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: 10-20 meters

Enumerated\_Domain\_Value\_Definition: Height of the tallest stratum is estimated to be greater than 10 but less than 20 meters.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: > 20 meters

Enumerated\_Domain\_Value\_Definition: Height of the tallest stratum is estimated to be greater than 20 meters.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Attribute:

Attribute\_Label: LOCATION

Attribute\_Definition: Location of the polygon in relation to Zion National Park and the project's environs buffer).

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: LUC\_II

Attribute\_Definition: Land use and land cover classification system name for the polygon.

Attribute\_Definition\_Source: Anderson, J.R., E.E. Hardy, J.T. Roach, R.E. Witmer. 1976. Land use and land cover classification system for use with remote sensor data. Geological Survey Professional Paper 964. Washington, D.C.: US Government Printing Office.

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: NVCS\_CODE

Attribute\_Definition: NVCS Code(s) to the formation level

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: NWI\_CLASS

Attribute\_Definition: National Wetlands Inventory Classification Class Name

Attribute\_Definition\_Source: Cowardin et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. US Fish and Wildlife Service National Wetlands Inventory.

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: NWI\_SPEC-M

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Attribute\_Definition: National Wetlands Inventory Classification Sub-system Label

Attribute\_Definition\_Source: Cowardian et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. US Fish and Wildlife Service National Wetlands Inventory.

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: NWI\_SUB-S

Attribute\_Definition: National Wetlands Inventory Classification Sub-system Label

Attribute\_Definition\_Source: Cowardian et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. US Fish and Wildlife Service National Wetlands Inventory.

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: NWI\_SYS

Attribute\_Definition: National Wetlands Inventory Classification System Label

Attribute\_Definition\_Source: Cowardian et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. US Fish and Wildlife Service National Wetlands Inventory.

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: PERIMETER

Attribute\_Definition: Perimeter of feature in internal units (meters).

Attribute\_Definition\_Source: ESRI

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Positive real numbers that are automatically generated.

Attribute:

Attribute\_Label: PHOTO

Attribute\_Definition: Corresponding Ortho-photo Sheet Number

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group and Horizon's Inc.

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: PHYSIO

Attribute\_Definition: Physiographic description of the polygon

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Enumerated\_Domain:

Enumerated\_Domain\_Value: Agricultural

Enumerated\_Domain\_Value\_Definition: This type represents areas with obvious evidence of current or past agricultural activity.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Barren

Enumerated\_Domain\_Value\_Definition: This type represents very sparse or completely unvegetated areas.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Forest

Enumerated\_Domain\_Value\_Definition: This type represents areas that are dominated by trees forming a closed canopy.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Herbaceous Vegetation

Enumerated\_Domain\_Value\_Definition: This type includes all areas that are graminoid or forb dominated.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

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Enumerated\_Domain\_Value: Impoundments

Enumerated\_Domain\_Value\_Definition: This represents ponds, lakes, and other standing bodies of water.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Land-Use

Enumerated\_Domain\_Value\_Definition: This type represents areas that have been obviously altered by human activity.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Shrubland

Enumerated\_Domain\_Value\_Definition: This type represents areas dominated by shrubs.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Streams

Enumerated\_Domain\_Value\_Definition: This type represents canals, intermittent streams, perennial streams, and other moving bodies of water.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Woodland

Enumerated\_Domain\_Value\_Definition: This type represents areas that are dominated by trees forming an open or discontinuous canopy.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Attribute:

Attribute\_Label: Shape

Attribute\_Definition: Feature geometry.

Attribute\_Definition\_Source: ESRI

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Coordinates defining the features.

Attribute:

Attribute\_Label: SUBCLASS

Attribute\_Definition: NVCS Subclass Name(s) and Code(s)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: SUBGROUP

Attribute\_Definition: NVCS Subgroup Name(s) and Code(s)

Attribute\_Definition\_Source: National Vegetation Classification System

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: VEG\_CNAME

Attribute\_Definition: Map Unit Common Name

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: VEG\_CODE

Attribute\_Definition: Map Unit Code

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Positive real numbers assigned by USBR Remote Sensing and GIS Group

Attribute:

Attribute\_Label: VEG\_NAME

Attribute\_Definition: Map Unit Scientific Name

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group

Attribute\_Domain\_Values:

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### Zion National Park

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Unrepresentable\_Domain: Text

Attribute:

Attribute\_Label: VEG\_PAT

Attribute\_Definition: Vegetation pattern within the polygon

Attribute\_Definition\_Source: USBR Remote Sensing and GIS Group and Zion National Park

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Text

Enumerated\_Domain:

Enumerated\_Domain\_Value: Clumped/patchy

Enumerated\_Domain\_Value\_Definition: The general pattern of the vegetation was considered to occur in obvious stands/clumps/patches with irregular openings between each stand.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Homogeneous

Enumerated\_Domain\_Value\_Definition: The general pattern of the vegetation was considered to be consistent and continuous across the entire polygon.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: Linear

Enumerated\_Domain\_Value\_Definition: The general pattern of the vegetation was considered to occur along a line and/or in discrete rows.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Enumerated\_Domain:

Enumerated\_Domain\_Value: N/A

Enumerated\_Domain\_Value\_Definition: This attribute was not applicable for this vegetation or land-cover type.

Enumerated\_Domain\_Value\_Definition\_Source: Zion National Park, Utah

Attribute:

Attribute\_Label: ZION\_VEG#

Attribute\_Definition: Internal feature number.

Attribute\_Definition\_Source: ESRI

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Sequential unique whole numbers that are automatically generated.

Attribute:

Attribute\_Label: ZION\_VEG-ID

Attribute\_Definition: User-defined feature number.

Attribute\_Definition\_Source: ESRI

Attribute\_Domain\_Values:

Unrepresentable\_Domain: Sequential whole numbers

Distribution\_Information:

Distributor:

Contact\_Information:

Contact\_Organization\_Primary:

Contact\_Organization: USGS Biological Resources Division, Center for Biological Informatics

Contact\_Person: USGS-NPS Vegetation Mapping Program Coordinator

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Address\_Type: Physical Address

Address: USGS

Address: Biological Resources Division, CBI

Address: Building 810, Room 8000

City: Denver

State\_or\_Province: Colorado

Postal\_Code: 80225-0046

Country: USA

Contact\_Address:

Address\_Type: Mailing Address

**USGS-NPS Vegetation Mapping Program**  
**Zion National Park**

---

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Postal\_Code: 80225-0046

Country: USA

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Contact\_Facsimile\_Telephone: (303) 202-4219 (org)

Contact\_Electronic\_Mail\_Address: gs-b-npsveg@usgs.gov

Resource\_Description: NPS Vegetation Mapping Program: Vegetation Map of Zion National Park

Distribution\_Liability: Although these data have been processed successfully on a computer system at the U.S. Geological Survey, no warranty expressed or implied is made regarding the accuracy or utility of the data on any other system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty. This disclaimer applies both to individual use of the data and aggregate use with other data. It is strongly recommended that these data are directly acquired from a U.S. Geological Survey server, and not indirectly through other sources which may have changed the data in some way. It is also strongly recommended that careful attention be paid to the contents of the metadata file associated with these data. The U.S. Geological Survey shall not be held liable for improper or incorrect use of the data described and/or contained herein.

Standard\_Order\_Process:

Digital\_Form:

Digital\_Transfer\_Information:

Format\_Name: HTML

Digital\_Transfer\_Option:

Online\_Option:

Computer\_Contact\_Information:

Network\_Address:

Network\_Resource\_Name: [http://biology.usgs.gov/npsveg/zion/index.html#geospatial\\_veg\\_info](http://biology.usgs.gov/npsveg/zion/index.html#geospatial_veg_info)

Fees: None

Metadata\_Reference\_Information:

Metadata\_Date: 20040224

Metadata\_Review\_Date: 20060911

Metadata\_Contact:

Contact\_Information:

Contact\_Organization\_Primary:

Contact\_Organization: USGS-NPS Vegetation Mapping Program Coordinator

Contact\_Address:

Address\_Type: mailing and physical address

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Contact\_Electronic\_Mail\_Address: gs-b-npsveg@usgs.gov

Metadata\_Standard\_Name: FGDC-STD-001.1-1999 Content Standard for Digital Geospatial Metadata, 1998 Part 1: Biological Data Profile, 1999

Metadata\_Standard\_Version: FGDC-STD-001-1998

Metadata\_Extensions:

Online\_Linkage: <http://biology.usgs.gov/fgdc.bio/bionwext.txt>

Profile\_Name: Biological Data Profile FGDC-STD-001.1-1999